WHAT IS CLAIMED IS:

Claim 1-13
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1. Electrical rotating machine comprising a rotor and a stator, the rotor and/or the stator each comprising bundles of laminations positioned by way of separate carrying elements (rotor hub 3, stator housing), and

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a non-rotatable connection between the respective carrying element and the assigned bundle of laminations by a form-locking contact of the carrying element (on the pertaining bundle of laminations which is caused by plastic deformation,

wherein the respective bundle of laminations has a profiled contact surface for the assigned carrying element (rotor hub 3), and

wherein form-locking contact is achieved on the profiled contact surface of the bundle of laminations by an electromagnetic forming of the carrying element (rotor hub 3, stator housing) effective at least in areas.

2. Electrical rotating machine according to Claim 1, wherein the rotor has a bundle of laminations with longitudinal grooves,

wherein a contact surface for the rotor hub has a wave profile, and

wherein a surface-enlarging wave rest is assigned to each longitudinal groove.

3. Electrical rotating machine according to Claim 2, wherein the rotor hub is constructed with a relatively thin-walled cylinder jacket which is molded by electromagnetic forming into the wave profile of the bundle of laminations.

4. Electrical rotating machine according to Claim 2, wherein the rotor hub in the cast construction has a connection surface which corresponds with the wave profile of the bundle of laminations, and

wherein the shrinkage occurring with the cooling of the cast hub results in a joining play (S_F) used for joining the cast hub with the bundle of laminations, which jointly play is eliminated after the joining by electromagnetic formation.

5. Electrical rotating machine according to Claim 1, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.

6. Electrical rotating machine according to Claim 2, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.

7. Electrical rotating machine according to Claim 3, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.

8. Electrical rotating machine according to Claim 4, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.

9. Electrical rotating machine according to Claim 1, comprising use of the rotating machine as an asynchronous motor or synchronous motor, as a starter and generator device, which can be coupled with a crankshaft of an internal-combustion engine.

10. Electrical rotating machine according to Claim 2, comprising use of the rotating machine as an asynchronous motor or synchronous motor, as a starter and generator device, which can be coupled with a crankshaft of an internal-combustion engine.

11. Electrical rotating machine according to Claim 3, comprising use of the rotating machine as an asynchronous motor or synchronous motor, as a starter and generator device, which can be coupled with a crankshaft of an internal-combustion engine.

12. Electrical rotating machine according to Claim 4, comprising use of the rotating machine as an asynchronous motor or synchronous motor, as a starter and generator device, which can be coupled with a crankshaft of an internal-combustion engine.

13. Electrical rotating machine according to Claim 5, comprising use of the rotating machine as an asynchronous motor or synchronous motor, as a starter and generator device, which can be coupled with a crankshaft of an internal-combustion engine.

14. A method of making an electrical rotating machine comprising a rotor and a stator, the rotor and/or the stator each comprising bundles of laminations positioned by way of separate carrying elements (rotor hub 3, stator housing), and

a non-rotatable connection between the respective carrying element and the assigned bundle of laminations by a form-locking contact of the carrying element on the pertaining bundle of laminations which is caused by plastic deformation,

wherein the respective bundle of laminations has a profiled contact surface for the assigned carrying element (rotor hub 3),

said method comprising electromagnetic forming of the carrying element effective at least in areas to achieve form-locking contact on the profiled contact surface of the bundle of laminations

15. A method of making an electrical rotating machine according to Claim 14, wherein the rotor has a bundle of laminations with longitudinal grooves,

wherein a contact surface for the rotor hub has a wave profile, and

wherein a surface-enlarging wave rest is assigned to each longitudinal groove.

16. A method of making an electrical rotating machine according to Claim 15, wherein the rotor hub is constructed with a relatively thin-walled cylinder jacket which is molded by electromagnetic forming into the wave profile of the bundle of laminations.

17. A method of making an electrical rotating machine according to Claim 15, wherein the rotor hub in the cast construction has a connection surface which corresponds with the wave profile of the bundle of laminations, and

wherein the shrinkage occurring with the cooling of the cast hub results in a joining play (S_F) used for joining the cast hub with the bundle of laminations, which jointly play is eliminated after the joining by electromagnetic formation.

18. A method of making an electrical rotating machine according to Claim 14, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.

19. A method of making an electrical rotating machine according to Claim 15, wherein an additional indentation is provided in the profiled contact surface of the respective bundle of laminations, and

wherein a section of the rotor hub, which is molded into the indentation during the electromagnetic forming, is used for the axial securing of the rotor hub relative to the bundle of laminations.